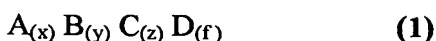


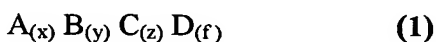
We claim:

1. A cobalt imprinted polymer composition useful for the selective removal of cobalt, having general formula (1)



wherein A is any vinyl monomer containing hydroxyl group, B is any vinyl monomer bearing acidic group, C is any vinyl monomer containing an amino group and D is a cross linker bearing vinyl group and x, y, z and f are the mole fractions of A, B, C and D respectively in the final polymer and vary such that $0 < x, y, z < 1$ and f can vary between 0 and 1 and $x+y+z+f=1$.

2. A process for the preparation of the polymeric composition (1)



wherein A is any vinyl monomer containing hydroxyl group, B is any vinyl monomer bearing acidic group, C is any vinyl monomer containing an amino group and D is a cross linker bearing vinyl group and x, y, z and f are the mole fractions of A, B, C and D respectively in the final polymer and vary such that $0 < x, y, z < 1$ and f can vary between 0 and 1 and $x+y+z+f=1$, said process comprising preparing a complex of monomers A, B, and C bearing the functional groups, and a source of cobalt in a solvent, adding a cross linker D, porogen and a free radical initiator to this mixture, polymerizing the mixture to obtain a cobalt imprinted polymer, extracting cobalt from the cobalt imprinted polymer to obtain the final polymer composition.

3. A process as claimed in claim 2 wherein the monomer (A) is selected from the group consisting of 2-hydroxy ethyl methacrylate, 2-hydroxy propyl methacrylate, N-methacryloyl serine and p-styrene phenol.
4. A process as claimed in claim 2 wherein the monomer (B) is selected from the group consisting of N-(4-vinyl benzyl) iminodiacetic acid, acrylic acid, methacrylic acid, N-methacryloyl aspartic acid, N-methacryloyl glutamic acid, Acrylamido methane sulfonic acid, p-vinyl benzoic acid and 2-acetamidoacrylic acid.
5. A process as claimed in claim 2 wherein the monomer (C) is selected from the group consisting of N-vinyl imidazole, N-methacryloyl histidine, 4(5) vinyl imidazole, 4-vinyl pyridine and p-amino styrene.
6. A process as claimed in claim 2 wherein the crosslinker (D) is selected from the group consisting of ethylene glycol dimethacrylate, triethylene glycol, dimethacrylate, divinyl benzene, trimethylol propane trimethacrylate, N,N' bis acrylamide, and

trimethylol propane acrylate, glycerol dimethacrylate, bisphenol A dimethacrylate and bisphenol A diacrylate.

7. A process as claimed in claim 2 wherein the free radical initiator is selected from the group consisting of azobisisobutyronitrile, t-butyl hydroperoxide and benzoyl peroxide.
8. A process as claimed in claim 2 wherein the source of cobalt is a salt of cobalt selected from the group consisting of cobalt nitrate, cobalt chloride and cobalt acetate.
9. A process as claimed in claim 2 wherein the solvent is a lower aliphatic alcohol.
10. A process as claimed in claim 2 wherein the porogen is a higher aliphatic alcohol selected from dodecanol, hexanol and octanol.
11. A process for the removal of cobalt from the mixture of metal ions using the polymeric composition of formula (1)

$$A_{(x)} B_{(y)} C_{(z)} D_{(f)} \quad (1)$$

- wherein A is any vinyl monomer containing hydroxyl group, B is any vinyl monomer bearing acidic group, C is any vinyl monomer containing an amino group and D is a cross linker bearing vinyl group and x, y, z and f are the mole fractions of A, B, C and D respectively in the final polymer and vary such that $0 < x, y, z < 1$ and f can vary between 0 and 1 and $x+y+z+f=1$, which comprises contacting a mixture containing cobalt metal ions with a polymeric composition of formula (1) to form a cobalt complex with the polymer, separating the cobalt complex polymer by conventional methods to obtain the mixture devoid of cobalt.
12. A process as claimed in claim 11 wherein the metal ion mixture has a pH in the range of 2 to 6.
 13. A process as claimed in claim 11 wherein the quantity of the polymeric composition (1) is 1000 times by wt of that of the cobalt metal ion concentration in the mixture.